ANNUAL REPORT

OF THE

Medical Officer of Health

ON THE

SANITARY CONDITION

OF THE

Keynsham Rural District Council

(SOMERSET)

AND THE

Warmley Rural District Council

(GLOUCESTERSHIRE)

FOR THE YEAR

1894.

GEO. GORDON & SON, TYP, 10, OLD KING ST.

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17, Whiteladies' Road,
Clifton, Bristol,
January, 1895.

Medical Officer of Healths'

ANNUAL REPORT

For the Year 1894.

TO THE

District Council for the Rural District of Keynsham

(SOMERSET)

AND THE

District Council for the Rural District of Warmley

(GLOUCESTERSHIRE).

GENTLEMEN,

The Keynsham Rural Sanitary District having been divided into your two districts it becomes my duty, as formerly Medical Officer of Health to that District and now to yours, to report to you upon the sanitary state of your districts during the past year, 1894. In doing so I have tried to divide, as far as possible, matters concerning each district from those concerning the other, and in this Report I have endeavoured to give a summary of the sanitary history of

your districts during 1894, following the plan, adopted in previous reports to the Keynsham Sanitary Authority, of dealing with various matters under certain heads. I have also thought it desirable, as this Report is the first to your newly-constituted Councils, to set forth briefly the conditions as to the character of each district with regard to occupation of the population and geology.

Character of District, Occupation, &c. :—

Keynsham District (Somerset).—This District comprises 14 parishes, viz. :—Brislington, Whitchurch, Queen Charlton, Keynsham, Compton Dando, Marksbury, Priston, Stanton Prior, Newton St. Loe, Corston, Burnett, Saltford, Kelston, and Northstoke. At one end the District touches the City of Bristol and at the other comes up to the suburbs of Bath, thus forming as it were a connecting link between the two cities. Building is rapidly going on in Brislington and Keynsham, and this village and town are practically urban in character. A fair amount of building activity is being displayed at Saltford village and this is a place likely to grow, especially now there is a public water supply. The rest of the District consists of small scattered villages almost entirely agricultural, and the occupation of the inhabitants is almost entirely agricultural also. Brislington and Keynsham contain a considerable number of residents whose business lies in Bristol, and there are brass mills, logwood mills, gas-works, and a soap and a shoe factory at Keynsham ; another brass mill and some varnish works at Saltford ; brick works at Brislington ; and a large laundry in Northstoke parish.

Configuration and Geology :—

Keynsham District.—On the north this District is bounded by the river Avon, but the parishes of Kelston and Northstoke lie to the north of that river. From the Avon valley the ground rises pretty rapidly on either side and the general surface lies fairly high and is undulating or in some parts hilly. The Chew, a small tributary of the Avon, runs through the parishes of Compton Dando and Keynsham, and the Brislington Brook, also tributary to the Avon, through

Whitchurch and Brislington parishes. The surface allows of fairly rapid drainage of storm water, but certain low-lying parts near the Avon, such as Keynsham Hams, are liable to flooding. Flooding also occurs, at times, along the valley of the Chew, and as it passes through Keynsham Town the houses on its banks are apt to suffer, as they did during the recent floods. The Brislington Brook, where it passes through the village of that name, also invades some of the houses when in flood.

A certain amount of knowledge of the geology of a district is desirable as bearing on the character of the soil with regard to retention, or not, of moisture, and the consequent likelihood, or not, of effects on the health of persons living on it from damp or ground-air rising into their houses. From the character of the soil, too, one knows largely what kind of water that soil will yield, and the greater or less possibility of matter from cesspits or any other sources of pollution finding its way through the pores or fissures of the soil into wells or springs near. The following is a summary of the geology :—

Red Marl.—Crops out at Arno's Court Estate, Brislington, and continues back nearly to Whitchurch and Queen Charlton Villages, taking in the west corner of Keynsham Parish : its outline is very irregular. Various irregular outcrops also occur alongside the Penarth Beds in Compton Dando, Marksbury, and Keynsham Parishes.

Penarth Beds.—A thin irregular band separates the red marl outcrops, above-mentioned, from the lower lias, to be afterwards described, and covers a good portion of Queen Charlton Parish (the village is on it), thence it continues in a thin band towards Keynsham Town on one side of the Chew Valley, and doubles back on the other side of the valley, still in a thin band, through Burnett, Priston, and Marksbury Parishes (Marksbury village is partly on it). Another thin irregular band starts from the bank of the Avon, near Saltford Village, and runs through Corston and Newton St. Loe Parishes separating an outcrop of red marl, on the Avon side of it, from the lower lias beyond.

Lower Lias (Clay and Limestone).—Occupies the greater part of the parishes of Whitchurch, Queen Charlton, Keynsham, Saltford, Burnett, Marksbury Stanton Prior, Priston, Newton St. Loe, and Kelston, with outcrops of Midford Sand and Inferior Oolite at Stantonbury Hill, Winsbury Hill, and a larger one occupying part of Newton St. Loe, Priston, and Stanton Prior Parishes to the south of the Avon, and another in North Stoke and Kelston Parishes to the north of that river.

The town of Keynsham and the villages of Whitchurch, Priston, Stanton Prior, Marksbury, Burnett, Saltford, Newton, and Kelston, are on this formation.

Coal Measures.—A large part of the parishes of Brislington and Compton Dando with the villages so-named are situated on these. There is a small outcrop between Corston and Newton Villages and the river Avon (Corston Village is situated on this outcrop).

Alluvium.—Is found near the Avon and Chew banks with outcrops of river gravel at one or two points in Keynsham and Saltford Parishes.

Great or Bath Oolite.—This crops up in a small part of Northstoke Parish.

Character of District, Occupation, &c. :—

Warmley Rural District (Gloucestershire).—This District is a rapidly increasing one, largely urban in character, lying to the north of the river Avon, practically joining the outskirts of Bristol and Bath, and consisting of two whole parishes (Bitton and Siston), and parts of the three parishes of Hanham, Mangotsfield, and Oldland, the rest of these three parishes being in the Kingswood Local Board District. A large part of the parishes of Hanham, Mangotsfield, and Oldland, and part of Bitton Parish, is either now or is rapidly becoming urban in character, especially at Downend, Staple Hill, Soundwell, Mangotsfield Village, Warmley, Cadbury Heath, Oldland and North Commons, and Willsbridge, at which parts building is rapidly going on. That part of Bitton Parish nearest Bath and Siston Parish are quite rural in character.

As regards occupation of the inhabitants—this, in the rural parts, is of course mainly agricultural. At Staple Hill and Downend there are a considerable number of residents whose business lies in Bristol, and scattered over the District (in the more urban parts) are numerous shoe factories, giving employment to a large number of persons both in the factories and as out-workers. At Warmley there are brick and sanitary pipe works; lime-kilns at Willsbridge; paper mills at Bitton; file works at Mangotsfield; and collieries in Mangotsfield Parish, and Golden Valley, Bitton: the number of colliers in and around Mangotsfield is considerable.

Configuration and Geology :—

Warmley Rural District.—The larger part of the District lies at rather a high elevation above the sea and the surface is undulating, but a considerable portion of Bitton and some of Oldland and Hanham Parishes are not very high above the level of the river Avon, by which river the District is bounded on the south. Through the northern part of the District runs the small river Frome, a tributary of the Avon. Certain low-lying portions near the Avon are liable to flooding at times, as at the hamlet of Swineford.

I need not repeat what I have already said as to the desirability of some knowledge of the geology of a district (*vide* Keynsham District above); the following formations occur :—

Coal Measures (Pennant Grit).—Nearly the whole of Mangotsfield Parish, including Mangotsfield, Downend, Staple Hill, and Soundwell; Warmley itself, North Common, and Oldland Common, are on this formation.

Lower Lias (Clay and Limestone).—Bitton Parish, with the village of Bitton, and Siston Parish are almost entirely on the lias.

Penarth Beds and Red Marl.—A thick band of these separates the coal measures of Mangotsfield Parish, &c., from the lower lias of Bitton and Siston. In this band there are small outcrops of lower lias near Homeapple Hill and Hanham Green; one or two small outcrops of carbon-

iferous limestone, millstone grit, and midford sand and marlstone; and a small outcrop of coal measures at Golden Valley.

Alluvium and River Gravel.—Occur near the banks of the Avon in Bitton and Hanham Parishes.

Sewerage and Excrement Disposal:—

It may, perhaps, be advisable to at this time state, as concisely as possible, the conditions with regard to these matters existing in the two new Districts, formed by the division of the Keynsham Union Rural Sanitary District, so that a point for comparison in future years may be obtained.

Keynsham District (Somerset).—The only real systems of pipe sewers existing in this District are those in the villages of Brislington and Saltford. The Brislington system is quite modern and up-to-date, being laid at proper gradients and efficiently ventilated and flushed; the house drains are properly connected and disconnected: the system has worked well during the past year, though one of the syphons under the brook and a small length of sewer required clearing owing to the accidental entrance of sand and road washings. This system of sewers serves nearly the whole of the village of Brislington, though some of the more isolated houses are outside the area of service. The outfall is into the tidal Avon. This year, too, about 500 yards of good pipe sewer, properly laid with manholes, &c., have been put down by private owners, under sanction of the Sanitary Authority, on the New Brislington estates. This sewer joins the village outfall sewer. As mentioned in former reports a large number of houses are being erected in this parish on the road to Bristol, and there is real need of some properly-constructed sewer to which they can connect: my views on this matter will be found in the annual reports for 1892-3.

The Saltford sewer is a single pipe sewer, laid down more than six years ago, which, commencing at the top of the village, runs down the main street and finally empties into the river Avon. It is unventilated save by one shaft at its head, and is only flushed by road water which enters its

upper end. As there are no branches, only the houses along the main road can connect to it, and there are a large number of houses from which it is inaccessible.

In the town of Keynsham there are one or two lengths of pipe sewer. There is one starting from the Church and running down the road towards Bristol, finally emptying into a small stream which carries the sewage into the Avon. Another takes the sewage from some of the new houses on the Dapp's Hill estate into the river Chew, a tributary of the Avon. This sewer was laid by the owners and was so faulty that, owing to leakage out of it, about 80 yards had, this year, to be taken up and relaid by the Authority. There is a third short length near the Lamb and Lark Inn which also empties into the Chew. In none of tnese cases is there any provision for ventilation or proper flushing.

In other parts of Keynsham Town, and also of the district where houses connect to any sewer at all, it is to old highway "sewers," originally constructed to carry off storm-water, which are quite unsuited for carrying sewage, and, as sewers, are worse than useless, often having no bottom but the ground or rock, being leaky, laid at varying levels, and often containing a collection of decomposing filth. The dangers from such so-called "sewers" are of course the pollution of soil, which must occur from soakage into it of fluid from them, and the consequent possible pollution of the ground water supplying wells; also that the foul gases, generated by their decomposing contents, may force their way through inefficiently trapped drains into the houses connected with them.

With regard to house drains, although a good deal has been done by relaying many with pipes and attention to trapping, there are still an enormous number of old stone and other drains in existence untrapped or inefficiently trapped. In some cases a house has no drain and slops are thrown on the ground surface, often close to houses. Slopwater pits exist in some cases, the slops being led to them by some form of drain, but these pits are not water-tight and their contents soak into the soil, often in dangerous proximity to wells.

The usual method of disposing of excrement is by some form of cesspit. I have frequently pointed out the offensiveness and danger from pollution of air, soil, and water, entailed by these cesspits, which are seldom water-tight but permit their contents to soak away, which are not unfrequently uncovered and present to sight and smell a disgusting mass of putrifying filth, and which are seldom ventilated save through the open privy or any drain (often untrapped) which may be connected to them. In one or two parts (Corston Village for example) a considerable number of these insanitary cesspits have been replaced by a form of dry pail closets : and from time to time in other parts of the District, where there has been sufficient ground available for disposal of the pail contents, the abolition of cesspits in favour of pail closets has been advised and not infrequently secured. I should much like to see a general adoption of this form of closet in the rural parts.

As to my views with regard to the best method to adopt as to house drainage and disposal of excrement and slops, I beg to refer you to my annual report for 1890, pages 4 to 6.

Early in 1894 the necessity of a sewerage system for the town of Keynsham was once more emphasised, by a complaint to the Sanitary Authority of an intolerable nuisance caused by a cesspool receiving the sewage and storm water of ten houses known as Priory Road. The Authority requested me to visit and report on this nuisance and I accordingly did so. The cesspool had apparently been made without an overflow and its contents were intended to soak away into the soil. The result was that the fluid filth had saturated the soil and even appeared in pools upon the surface of the garden ground for some distance around. The stench from these pools and the saturated soil formed the nuisance complained of, and several cases of severe sore throat in persons living near were, quite possibly correctly, attributed to it. At the time of my visit there were no pools upon the garden ground, as a trench had been dug from the top of the cesspool to the wall bounding the plot of ground and for some little distance along the inside of the wall ; this trench

had no doubt drained the soil to some extent, but there were distinct traces of pools upon the surface of the garden. Although little or no rain had fallen for some days prior to my visit, and the quantity of fluid reaching the cesspit had not therefore been as great as it often is, there was a constant flow of black offensive sewage into the trench, from which it could only escape by soaking through, or under, the boundary wall into the field beyond. The conditions found formed an excellent example of the failure and danger of this kind of arrangement for sewage disposal, and were reported as forming a "gross and dangerous nuisance," and "a just cause of complaint." The abatement of this nuisance was a matter of great practical difficulty. There was nowhere to take any overflow from the cesspool, were one made; if emptied it would again fill in a very short time and require constant pumping, while the sewage would still remain to be disposed of. The possibility of subirrigation under the field beyond the wall, after straining off the solids and receiving the fluid in an automatic flush tank, was negatived by difficulty in obtaining the consent of the owner of the field and the necessity of disposing of the storm water from the houses by a separate set of drains; and the only satisfactory proceeding would have been to connect the houses to a sewer—but there was and is none.

On the same day I also visited and reported on two other cesspits (complaints as to which have from time to time been received), situated within 100 to 200 yards of the one above, and separated from Priory Road by the Great Western Railway. One of these takes the sewage of the whole of The Avenue (seven houses) and is situated just opposite Priory Road, to which road, as well as to the immediate neighbourhood, it was a nuisance. This cesspool overflowed into an old quarry and there formed an offensive pool close to a lane. The contents had been from time to time pumped on to a small bit of garden, close to the Avenue houses, from which they ran on to the railway embankment. The second cesspool is a semi-open one, lying in the ditch on the south side of the railway, between the Avenue and Priory Road; it is formed by the highway sewer which was piped down the bank a year

or two ago : this highway sewer receives the sewage of the houses on the west side of Station Road. These two cesspools were also reported as nuisances. The report continued, "here within a very small area are gross nuisances incapable of permanent and satisfactory abatement without a proper system of sewers, yet, when your Authority attempts to move in the matter, the ratepayers declare that the present system of sewage disposal is sufficient and satisfactory, and, with that assurance, your Authority appears satisfied and no steps are taken to remedy the evils so often complained of as arising from want of sewers. It is perhaps rather unkind of fate to decree that the only defect which was mentioned by the joint Committee on Keynsham sewage last year, which defect that Committee appeared to think had been satisfactorily disposed of, should be the first to call attention to the want of sewers this year. The only way of curing these nuisances and preventing similar ones is the adoption of a proper sewerage system for the town." After consideration of this report the Authority requested the Surveyor to ascertain if it would be possible to connect these houses to a sewer running some little distance to a fresh cesspool in a field nearer Bristol, and also to examine the Engineer's plans for the sewerage of Keynsham Town, to ascertain whether they could be modified in any way so as to diminish the cost. The Surveyor reported to the effect that he could not advise the drains to the new cesspool, as that would only be removing the nuisance a little further away. The cost of the new drains and cesspit, to hold one week's sewage, he estimated at £253, besides which an acre of land would be required for treatment of the sewage removed from the new pit. The annual expense of the cesspit would also be very large, as a man employed to pump it would have to raise five gallons per minute for eight hours daily, and if a horse and cart were employed to remove the sewage it would be required to haul away $1\frac{4}{5}$ cubic yards per hour for eight hours every day. The annual expense he estimated at £146. The result of these calculations is a "*reductio ad absurdum*," for the amount of labour and expense to no good end would be absurd. To incur a yearly expense of £146, in addition to the cost of construction (£253), to ineffectually deal with

the sewage of 17 houses, would be to pay an amount yearly exceeding half the interest at 3½ per cent. on the estimated cost (about £7,700) of the Engineer's scheme, to sewer practically the whole town. With regard to the question of reducing the cost of the Engineer's scheme the Surveyor reported that by certain modifications, he thought a saving of £1,314 might be effected. This report was considered and the Surveyor was instructed to see the owners of the cesspools and the Engineer of the Great Western Railway with reference to the cleansing of the cesspools, and to report at the next meeting. At that meeting he reported that he had seen the Engineer of the railway and told him the Authority desired permission to carry a drain from the Avenue to join the existing drain by the side of the permanent way, to cover in the cesspool on the railway and carry the drain further down the embankment. The Engineer replied that he did not think the Company would offer any objection if plans and sections of the proposed alterations were deposited and the sanction of the Directors obtained. The Surveyor was instructed to prepare and forward the necessary plans. Plans were accordingly prepared (*vide* Surveyor' Report, page 46), but the consent of the Railway Company was not received till December and the matter was left over for the consideration of the new District Council. So far, therefore, the condition of these cesspools remains practically the same (*vide* Surveyor's Report, page 47).

I would advise your Council that this scheme should be abandoned as, although the Surveyor under definite instructions from the Sanitary Authority drew up as good a plan for the purpose as he could, to carry out the scheme proposed for dealing with the sewage of these 17 houses would be to treat the matter ineffectually, at an excessive cost, and in an illegal manner, because the sewage after entering a ditch eventually flows into the river Avon. The only true way of dealing effectually with this and other like conditions existing in the town is by laying down a system of sewers, such as was advised by the Engineer consulted some time ago by the Sanitary Authority, and I would endeavour to press upon you, as I formerly tried to do upon the Sanitary Authority, that sewer

provision is a matter of importance and urgency. Sewers must, sooner or later, be made, and delay can be productive of no good but may, on the other hand, be fraught with grave danger to the health of the town.

As bearing on the inefficiency of the present highway drains to act as sewers and the necessity for pipe sewers, I may mention that, as has frequently happened before at one point or another, the highway drain in the main street became blocked in 1894 necessitating considerable repair and trouble and revealing the fact that it was so constructed as never to clear itself but always to contain at least some inches of fluid (largely sewage) and thus to be practically an elongated cesspool.

The position of affairs with respect to the disposal of the sewage of the village of Whitchurch remains the same as at the end of 1892.

Warmley Rural District (Gloucestershire).—This District is at the present time without any system of sewers ; connection of privies, cesspit overflows and drains being sometimes made to highway sewers or into open ditches or streams. There are a few dry privies in use but the cesspit is the usual mode of excrement disposal, and house drainage, especially in the more populous (practically urban) and rapidly increasing parts of Staple Hill, Downend, Mangotsfield, Soundwell, Warmley, and Cadbury Heath is very defective. Up to the present it has been practically impossible to carry out proper drainage or excrement disposal owing to the absence of sewers, but the sewage scheme for Mangotsfield Parish, which covers the area embraced by the first four practically urban parts, is now being carried out, and will, I trust, be completed ere long. When the system is complete proper house drainage will be possible and must be enforced. I find it is intended (*vide* Surveyor's Report, page 47) to make use of manhole ventilators at the street level in some parts of this sewerage system, and I quite agree with the Surveyor that such openings are inadvisable, will very likely cause trouble, and should be replaced by ventilating shafts of sufficient height. I think your Council would do well to give this matter consideration.

I would direct your Council's attention to the Warmley and Cadbury Heath areas, where, in my opinion, sewers are necessary. The difficulty of satisfactorily dealing with the nuisance from the cesspool of the Cadbury Heath Board School, which was experienced in 1893, emphasised the need of sewers. I would ask your Council to give this matter their attention.

As to the general question of the use of highway drains as sewers and of cesspits for excrement disposal, I beg to refer your Council to the remarks on these points made above, under the heading Keynsham Rural District.

Scavenging :—

No change has been made in the general system by which refuse removal is left to householders. Collections of manure, &c., causing nuisance have to be dealt with from time to time.

Water Supply :—

During the year 28 (9 in Keynsham and 19 in Warmley District) new, and 153 (70 in Keynsham and 83 in Warmley District) old houses have been supplied with Company's water ; 22 wells have been closed (7 in Keynsham and 15 in Warmley District) ; and I have analysed 29 samples of water, of which 22 were contaminated with sewage, 2 contaminated with vegetable matter or surface water, and 5 were good. In most cases where contamination was found a supply from the Company's mains was obtained, and where such supply was not available steps were taken to prevent pollution as far as possible. In one case in the Warmley District (Gloucestershire) it was necessary to summon the owner before he would consent to closure of the well in question.

KEYNSHAM DISTRICT (Somerset).—I am pleased to report that the long-continued difficulty of dealing with the water supply of the village of Saltford and the provision of a pure for the old impure supply, a matter which has been under consideration since 1889, has this year been satisfactorily met by the West Gloucester Water Company carrying

their mains to the village. This new supply seems to be appreciated by the people, and many houses are now supplied from this source. The supplies at the villages of Corston, Priston, and Whitchurch, so far as they are public, continue satisfactory. The West Gloucester Water Company have extended their main from Saltford to the lower end of Corston Village.

In 1893 it was resolved to provide a public supply for the hamlet of Swineford by means of a pure spring, a small storage reservoir, and stand-pipes, and application was made to the Local Government Board for power to borrow £220 for that purpose. An enquiry was held by the Local Government Board on May 25th, 1894, and as the result a reply was received to the effect that the Board were advised that the pipes should be not less than three inches in diameter, and if, in consequence, it was desired to borrow a larger sum than £220 a copy of the resolution and fresh estimates should be forwarded to the Board. It was decided that, owing to the large increased outlay that would become necessary if the Board's requirement as to pipes were carried out, the scheme should be abandoned. Later on, in August, however, the Local Government Board were again approached with a view to their sanctioning the original scheme, and reasons for the adoption of pipes of less than three inches were put forward. In December the Board replied that after careful consideration of all the circumstances of the case they were prepared to waive their requirement, that the mains provided for the purpose of the scheme be not less than three inches in diameter, and that on learning that the Authority was prepared to carry out the scheme as originally submitted, the Board would further consider the application with a view to sanctioning the borrowing, for a period of 20 years, of the amount required. On receipt of this letter it was decided to carry out the original scheme, and I trust that it will be completed in 1895 : it will be a great boon to the people concerned.

With regard to the general water supply of the Keynsham District (Somerset), much has been done during the last six years to improve its quality by analysing well waters,

and when these were found contaminated requiring a supply to be obtained from the public mains, or by endeavour to prevent pollution where there are no mains. The parts where a public supply is now available are Brislington Village and part of Whitchurch Village, supplied by the Bristol Water Works Company; Keynsham Town, Saltford Village and part of Corston Village by the West Gloucester Water Company. Parts of Corston Village, Priston Village and Burnett are supplied by spring water conveyed in pipes to taps or stand-pipes. The other villages depend solely, as in part do those above-mentioned, on wells as a source of drinking water.

THE WARMLEY DISTRICT (Gloucestershire).—Downend, Staple Hill, Soundwell, Mangotsfield Village, Warmley, Cadbury Heath, Oldland Common, and Bitton are either wholly or in part supplied with water by the Bristol and West Gloucester Water Companies: there are however a very large number of wells, and badly constructed soft-water cisterns, in these places which are still in use. The rest of the District depends upon well or cistern water for its supply. Much has been done here, as in the Keynsham District, during the last six years to substitute a supply from public sources in place of that from wells, which latter, except in rare instances, is contaminated or not free from risk of pollution.

During March and April several samples of water were submitted to me for analysis from North Common, Bitton. The results of the analyses showed a greater or less degree of contamination in eight out of the nine waters examined. In order that I might be fully acquainted with the conditions existing at North Common, I visited the place on April 18th and examined carefully the surroundings of the wells analysed. In each case, except the one where analysis failed to show pollution, there were found to be possible sources of contamination, and the general conditions of sewage and slop disposal existing in the locality, revealed by my inspection, are such as to render it very probable that many of the other wells would be found, on analysis, to be polluted. A report to the above effect was presented to the Keynsham Union

Rural Sanitary Authority, in April, and it further stated that "I am of opinion that the water of the wells already examined is not usable for drinking purposes without danger to health. It appears to me that the best course of action would be for your Authority to write to the West Gloucester Water Company, asking if they will extend their mains to North Common : they are now about 200 or 300 yards from the house first to be supplied. The locality is fairly populous and several new houses appear to have been recently erected. Should the Company be unable to comply with your request, or in any case until they can do so, the conditions likely to cause contamination of the wells should be rectified as far as possible." I am not aware that, so far, anything has been done in this matter except to refuse a certificate of occupation to a new factory which one of the polluted wells was to have supplied ; at all events, as late in the year as December, the Water Company's Manager had no knowledge of any application having been made to them to supply North Common. I wish to again direct your Council's attention to the matter, and to express the opinion that it is one of some urgency and constitutes a danger the removal of which is fairly easy.

Infectious Disease :—

The past year has been free from this class of disease in the form of serious epidemic. The facts as to the various diseases included in the term infectious are detailed below.

1. Smallpox.—As during 1893, isolated cases of this disease made their appearance at intervals during the first quarter of 1894, but since 23rd March, on which date the last case was notified, both the Keynsham and Warmley Sanitary Districts have been free. In my annual report for 1893, I pointed out that, surrounded by smallpox as we were, fresh introductions of the disease were only to be expected, and of the five neighbourhoods then mentioned as most likely to be affected, three did actually furnish all this year's cases. It is interesting to notice that the cessation of introductions into your Districts coincided with the provision and use of a Smallpox Hospital in one of the adjoining affected districts (from which two of our cases were derived), and the

abatement of the epidemic in the other surrounding districts.

The two first cases in 1894 occurred in a house in Nightingale Valley, Brislington (Keynsham District, Somerset), and notification of them was received on 3rd January. The patients were an old woman over 60 and a baby of three weeks old. The baby was of course not vaccinated; the woman had been 20 to 30 years ago. The origin of these cases is obscure. The woman came to the house from Langport, arriving on 11th December, but did not fall ill till 17 or 18 days after her arrival, *i.e.*, not till December 28th or 29th; and as smallpox almost invariably shows itself in 12 to 14 days, it seems very improbable that she brought it with her. Again, the baby also fell ill on December 28th or 29th, so that it appears probable that they both took the disease from the same source, and, as the people of the house had not been out of the village for three weeks and the baby had not been out of the house, the infection must have been brought to the house. The question is how? The woman might have brought infected things with her, but, as she came from attending her daughter in confinement, and as I have not heard of any smallpox in Langport, this is unlikely. The father, who is a platelayer, might have been the agent, but the most likely channel of infection was a Cottage (Church) Meeting held each Thursday at the patient's cottage. Such a meeting was held on Thursday, December 14th, that is exactly 14 days before the 28th when those affected sickened, and it seems probable that some person attending the meeting brought the infection. Endeavour was made to find out who attended this meeting, so as to ascertain any source of infection, but the names of those present could not be obtained. There was no reason whatever to connect the previous case (1893) in Brislington with these cases. The cases were removed to the Keynsham Isolation Hospital and disinfection carried out next day (January 4th). The mother of the baby, and a neighbour and her daughter were revaccinated at once; the father and a male lodger at first refused, but consented after their employers had been informed of the facts. No further cases arose from these two.

On February 1st, notification of a case of smallpox in Rock Road, Keynsham (Keynsham District, Somerset) was received. The case was removed to hospital and disinfection carried out within twelve hours of receipt of notification. All the other inmates of the house were revaccinated on February 2nd. The patient was a man who worked for the Bristol Gas Company, and for five weeks prior to his illness had been lodging in Bristol, only returning to Keynsham from Saturday to Monday each week: there can be little doubt that he contracted the disease in Bristol. This man had been vaccinated in infancy but was not revaccinated.

The next case was notified on 26th February, and was that of a dairyman and milkseller at Downend (Warmley District, Gloucestershire); the patient had been vaccinated in infancy but was not revaccinated. His business took him into an adjoining district where smallpox was prevalent, and there he no doubt became infected. He was removed to hospital, disinfection was carried out, and the other inmates were revaccinated at once. There was no second case.

On 4th March, notification of a case of smallpox at Rock Road, Keynsham, was received, but on the case being visited the disease was found not to be smallpox.

The last case was notified on 23rd March, from Berkeley Road, Staple Hill (Warmley District, Gloucestershire). The patient was a young man, vaccinated but not revaccinated, who worked for the Contractor to an adjoining Local Board, in whose district smallpox was present, and he also had been visiting his sweetheart, who lived in the same Local Board District and in whose family was a case of smallpox nursed at home. He was removed to hospital, and disinfection and revaccination secured. No case arose from this one.

The remainder of the year having passed without any further case, your Districts will probably remain free from smallpox until that disease again gains a hold in neighbouring districts, and we are now in a position to review the prevalence of smallpox in the Keynsham and Warmley Districts, during 1893-4.

The following Table gives certain particulars with regard to the cases :—

Name	Age	Sex	Source of Infection	Date of Notification	Date of Onset	Character of Vaccination Scars	
E.B.	1¾ yrs.	F	? Manchester	April 21st	About 18th April	Unvaccinated	
M.J.	74	F	E.B.	May 13th	May 1st	None (was inoculated over 50 years before	
A.B.	25	M	?	May 10th	May 7th	**0** (vaccinated in infancy but did not take)	
G.B.	33	M	A.B.	May 25th	May 19th	**1** good (large	O (d
J.E.	14	M	?	July 1st	?	**4** poor	
A.E.	45	M	?	July 4th	?	**2** fair	
C.E.	6	M	J.E.	July 17th	July 14th	**4** fair	
Mrs. P.	35	F	J.E.	July 17th	July 14th	Unvaccinated	V (d Va cc
W.P.	19	M	?	Dec. 8th	Dec. 5th	**3** fair	
B.G.	3 wks.		?	Jan. 3rd	December 28 or 29	Unvaccinated	
M.H.	64	F	?	Jan. 3rd	December 28 or 29	Vaccinated 20 or 30 years ago (rash hid scars)	
J.G.	42	M	Bristol	Feb. 1st	Jan. 27th	**3** poor	
W.P.	26	M	Stapleton L. B. Dis.	Feb. 26th	Feb. 23rd	**3** good	
B.B.	25	M	Stapleton L. B. Dis.	Mar. 23rd	Mar. 16th	**2** good	

cination esult	Character of Attack	Result	Removed to Hospital		
—	Confluent	Recovery	No	1893	Keynsham
—	Discrete (very mild)	Recovery	No	1893	Keynsham
—	Confluent	Recovery	No	1893	Warmley
r 13th May ncubation) result	Discrete (mild)	Recovery	No	1893	Warmley
—	Semi-confluent (secondary fever 102°, abscess in neck)	Recovery	July 2nd	1893	
y 3rd result	Discrete (very mild)	Recovery	July 4th	1893	
—	Discrete (very mild, no secondary fever)	Recovery	July 18th	1893	
ted July 5 ncubation) ion ran its de by side smallpox	Confluent (no secondary fever)	Recovery	July 18th	1893	Keynsham
—	Discrete	Recovery	Dec. 9th	1893	
—	Discrete	Recovery	Jan. 4th	1894	
—	Semi-confluent	Recovery	Jan. 4th	1894	
—	Discrete (very mild)	Recovery	Feb. 1st	1894	
—	Discrete (very mild)	Recovery	Feb. 27th	1894	Warmley
—	Discrete (very mild)	Recovery	Mar. 24th	1894	Warmley

From this Table it is seen that in all there were 14 cases, 9 arising in 1893 and 5 in 1894. The disease was introduced into your Districts on 8 separate and distinct occasions at various points, on 4 occasions in 1893 and 4 in 1894. In no instance did the disease spread beyond persons who had been in intimate contact with a patient before the case was notified, and the 8 introductions only gave rise to 6 secondary cases. Five of these secondary cases occurred in 1893, and there was really no secondary case from either of the 4 introductions in 1894, as 2 of the 5 cases arose at the same time from the same source of infection introduced from without. In 1894, therefore, there were 4 introductions and no spread. It must, I think, be admitted that such a result shows clearly that, when proper precautions are taken, smallpox is a disease readily dealt with, and your Councils are to be congratulated upon the success of the measures adopted in dealing with these cases. By prompt attention and removal of cases to hospital, followed by immediate disinfection and vaccination or revaccination of all persons who had been exposed to risk of infection, the danger of extension and epidemic were averted. So successful indeed were these measures in 1894 that the cases were limited to those persons who were first attacked. This year's cases bear out what I stated in my report for 1893, as to the mitigating influence of vaccination on smallpox if that disease occurs in a vaccinated person. No case during either year was seen in a successfully *revaccinated* person, and the need of revaccination about the age of 10 to 12 is shown by the fact that of those attacked only one who was vaccinated was under 14, and 9 of the cases (by far the larger part) were in vaccinated persons whose ages ranged from 19 to 74. The woman, M.H., 64, had not been vaccinated for 20 to 30 years, and we have only her statement that she was ever done as the rash of smallpox completely hid the scars, if any—she had a bad attack. With regard to the reasons for, and necessity of vaccination, and revaccination, I must refer you to my annual report for 1893, but I wish to repeat what I have already stated and what I believe your Councils agree with, viz.:—That the only method of *preventing* smallpox is by universal thorough and successful vaccin-

ation and revaccination, but that so long as there remains among the population a greater or less number of persons unvaccinated, or inefficiently vaccinated and revaccinated, so long will cases of smallpox continue to occur; and that when smallpox does arise, as it must continue to do under existing conditions, the proper means of dealing with it are by prompt removal of the patient to an isolation hospital, followed by immediate thorough disinfection of all articles likely to be infected, *and* vaccination or revaccination, without delay, of all who have been exposed to risk of infection.

2. Scarlet Fever and Scarlatina.—The epidemic of this disease, which existed in your Districts in 1892-3, practically ceased in 1894 Cases did of course occur, but the total number notified in 1894 was 57, as compared with 119 in 1893 and 170 in 1892. Of these 57 cases only 12 belonged to the Keynsham District (Somerset), while 45 were in the Warmley District (Gloucestershire). The manner in which the cases were distributed in the several quarters of the year, and in the two Districts, is shown from the following Tables :—

Scarlet Fever—Keynsham Dis.				
Sub-registration District of	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.
Keynsham...	2	0	0	10
Newton ...	0	0	0	0
Totals ...	2	0	0	10

Scarlet Fever—Warmley Dis.				
Sub-registration District of	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.
Bitton ...	0	9	1	1
Oldland ...	7	11	8	8
Totals ...	7	20	9	9

From this it is seen that the District of Keynsham (Somerset) has been very free from this disease, no case at all having arisen in the Newton Sub-district: the proportion of cases to population is one to every 614·7 persons.

Of the two cases in Keynsham, during the first quarter, one was contracted out of the District; while of the 10 in the last quarter, 4 were in one house at Saltford, whence the disease did not spread; 2 were in one house in Keynsham Town; 2 in Brislington Village; and two in Keynsham

Town: that is there were 6 original and 4 secondary cases, while 4 of the original cases had no result.

The Warmley District (Gloucestershire) appears from the Table to have been much more heavily affected than the Keynsham District, and the Sub-district of Oldland seems to have chiefly suffered. That this was so in reality is shown by the following proportion of cases to population :—

Keynsham District	=	1 case to every	614·7	persons
Warmley District	=	,,	317·2	,,
Bitton	=	,,	497	,,
Oldland	=	,,	259	,,

One well-marked feature of this year's cases, in Warmley District, was the large number of houses in which several persons were affected, so that there was never any real epidemic prevalence. The portions of the District most affected were Warmley Batch and Cadbury Heath, and North Common, Bitton. At this last-named part there was, during the second quarter, a quick succession of 9 cases within a small area, but even here they were confined to a few families. Cases arose from time to time in other parts, but at no time was there any group of cases with a common cause, such as school attendance or milk infection.

The character of the disease in 1894 was very mild, and not a single death occurred from scarlet fever in either District.

3. Diphtheria and Membranous Croup.—One case only of diphtheria was notified during the year in the Keynsham District (Somerset). It occurred in the Newton Sub-district.

There was also one case only in the Warmley District (Gloucestershire). It occurred in the Oldland Sub-district. No case of membranous croup was notified, nor was there a death from either of these diseases during the year.

Your Districts have been very free from this disease for some years, and since 1892 (the first full year of notification) to the end of 1894 only 10 cases have been heard of; they have been isolated cases, no epidemic has arisen, and there has been no increase in the number of cases per year.

4. Typhus Fever.—No case notified.

5. Enteric or Typhoid Fever.—Eight cases of this disease were notified in the Keynsham District (Somerset), and all occurred in Keynsham Town. Two of these cases were imported. One of the two undoubtedly contracted the disease in S. Wales, and his brother, who emptied the patient's stools before the nature of the case was clear and who complained of their offensive smell, shortly afterwards fell ill in the same way, being doubtless infected by the first case. Another group of three cases, following one another at short intervals, occurred in a house at Keynsham, the water from the well supplying which had already been condemned, but the notice to close the well had not then expired. The water may have been, and was thought to be, the cause of the disease, especially as the child first attacked was in the habit of drinking water freely on return from school while the others were not. Two other cases, shortly after, arose in houses widely separated from each other and the one where the three cases mentioned above existed. All these children attended the same public school, and enquiry failed to show any definite or common source of infection. It is, however, possible that the source may have been the trough closets in use at this school. The first case of the five was ill some days before staying home and probably infected the closets. If these closets were not carefully and frequently flushed, effluvia from the infected contents may have given the disease to another child, who, after further infecting the troughs, retired ill, and so on. Instructions were given to the school managers to have these closets thoroughly cleansed and disinfected, and to see that they were afterwards kept clean and flushed : it is at least a coincidence that after this was done no more school children were attacked. With regard to the use of trough closets, I would remark, in passing, that they are excellent arrangements for use where large numbers of people have to be provided for, as in factories and schools, *if* kept thoroughly clean and flushed. When, on the other hand, they are not properly attended to they are little better than an open privy seat over a cesspool. They present a large surface for the retention of filth which will, at the best, decompose and become offensive, if not dangerous, and which, if partly

composed of infected matter, will most probably cause disease in persons using them. Should a trough become infected, matters are infinitely worse than they would be should one of a row of separate closets receive infected sewage, for in the case of the trough the whole row of six or more seats would possibly cause disease, in the row of closets only one; hence the chance of infection would be sixfold in the trough case. The closets too would be probably flushed after each use and the matters carried at once into the sewers, whereas they would be stored for 6, 12, 24, or more hours in the trough. The storing of sewage matter in such a receptacle as the trough for indefinite periods is contrary to the principles of sanitation, and, unless great care is taken to prevent fouling and storage, I regard these arrangements as dangerous. I am not aware that any outbreak of disease has been attributed to them previously, but I also am not aware that they have been specially thought of as possible causes.

The last case in Keynsham Town arose some time after the above and no definite source of infection could be ascertained: the person attacked was an adult.

In the Warmley District (Gloucestershire) there were four cases during the year, one of which at Longwells Green was an isolated case. The other three were in one house at Staple Hill. In neither case was the cause ascertainable; there were, however, serious drainage defects at the house in which the three cases arose.

No death from enteric fever was registered in either District during the year.

6. Measles.—There was some prevalence of this disease in the Warmley District (Gloucestershire) about the middle of the year, and three deaths occurred in the Bitton Sub-district; there was not, however, any epidemic.

In the Keynsham District (Somerset) there was, during August, an outbreak of measles, and it was deemed advisable to close Compton Dando School for four weeks. The disease disappeared, and this was the only village affected as far as I know. There was no death.

7. Whooping Cough.—The Keynsham District (Somerset) was, as far as I am aware, free from whooping cough. There was no death.

The Warmley District (Gloucestershire), however, suffered considerably. The disease was present in the District throughout the year, but more especially in the second and third quarters, during which 10, out of the 11 deaths registered, occurred. All these deaths were of children under five years of age. This disease is extremely infectious at close quarters, and would spread rapidly under such conditions as are present in public schools. Unfortunately, however, it is one over which a District Council can exercise only slight control, and its extreme fatality among children is largely due to want of care on the part of the parents, etc., in exposing sufferers to the risk of chill. The old idea that fresh air is good for whooping cough may or may not be correct, but if it be it does not mean that a child is to be recklessly exposed to all winds and weathers—such a proceeding is more likely to kill than cure. Besides, it is unlawful and morally wrong to send children out, when suffering, to the imminent risk of others; and to expose them in trams or trains (on the way to the sea or country, for cure (?)) is a course of action dangerous to the patient and others, and argues a recklessness and want of thought, for private and public weal, in those who order or carry out the exposure, which are reprehensible if not criminal. Such a disease as this, which is the most fatal of any special disease to children under five years of age, should be treated with all respect, and every care ought to be taken by those in charge of patients to avoid risk of chill, during the illness and convalescence, or any actions which may expose others to the chance of infection.

8. Puerperal Fever.—No case was notified in the Keynsham District (Somerset).

Two cases occurred in the Warmley District (Gloucestershire, one in the Bitton and one in the Oldland Sub-district —both cases were fatal.

9. Erysipelas.—Five cases were notified, as against 7 in 1893 and 10 in 1892, in the Keynsham District (Somerset). Cases of this disease have become less frequent since 1892, and the Newton Sub-district has not produced a notified case in the two years 1893 and 4.

On the other hand, there has been a very large increase in notified cases in the Warmley District (Gloucestershire)—26 cases in 1894, compared with 8 in 1893 and 16 in 1892. The disease is either becoming more prevalent or advice is sought more frequently. There was no special uniform association of insanitary conditions noted in the surroundings of cases: in some of course they were present, but certainly not in others. Two deaths, both in the Oldland Sub-district, one under, the other over, five years of age were registered as from erysipelas.

The usual precautions of disinfection, &c., were taken in all cases except those of erysipelas.

10. Choleraic Diarrhœa.—On October 1st, notification of a case of choleraic diarrhœa in Temple Street, Keynsham, was received. The case was at once visited, and it was ascertained that the man was quite well on 28th September; he went to work on 29th, was seized with abdominal pain and profuse diarrhœa at 8 a.m., returned home at 3 p.m.; diarrhœa and cholic with colorless stools, cramps, lividity, and suppression of urine followed. When I saw him he was convalescent, but very weak: he ultimately recovered. The night before his seizure he had pigs' chittlings, and again for breakfast on 29th. The people were supplied with disinfectants and instructed as to their use, and every precaution taken. No further case occurred.

11. Influenza.—Only four cases of influenza figure in the returns of pauper sickness for 1894, viz.:—two in the week ending 13th January, and one each in the weeks ending 1st September and 1st December, yet during the first quarter of the year four deaths were ascribed to this disease. They were all in the Warmley District (Gloucestershire), and were severally due to chronic rheumatism and influenza; influenza and meningitis; influenza, weak heart and bronchitis; and to confinement and influenza. I do not know that there has been any epidemic prevalence.

12. Anthrax.—During the second quarter a death was returned from "malignant pustule," a disease identical with anthrax in cattle, and was that of a man, aged 20, living at

Hanham (Warmley District) and working as a journeyman silver engraver. The case only came to my notice through the death returns, and personal enquiry was therefore impossible, but the medical attendant states that he had no doubt as to the nature of the disease, which began with an itching pimple on the upper lip followed by the classical symptoms and appearances. The medical attendant could not make out the source of infection, but is inclined to attribute it to the agency of a fly—a possible solution of a disease very rare in these parts. Some colour is given to this supposition by the fact that there had been anthrax in sheep within a few miles a little time before.

Infectious Hospital:—

Keynsham District (Somerset).—Early in January I reported that there were only two vacant beds in the hospital, one male and one female, and advised that, as most probably further cases of smallpox would occur, it was advisable to at once purchase six more beds and bedding, thus completing the twelve beds for which the hospital is constructed. These beds were at once obtained and the building is now capable of accommodating its full number of patients.

In the latter part of 1893 and the early part of 1894 great inconvenience was caused by the freezing and bursting of the water-pipes throughout the building. The difficulty was met, temporarily, by the erection of a stand-pipe and hose, and, as soon as the hospital was empty and disinfected, measures were taken to prevent recurrence of similar trouble by placing a stop-cock on each supply pipe and drip-cocks at the lowest points of the house system, so that the water can be cut off and the pipes emptied when the wards are not in use. The pipes within the building are also now cased in, but not in my opinion satisfactorily, as they are covered with tow, or some such material, held round them by coarse sacking—substances likely to catch and retain infection and most difficult to disinfect: they should have been boxed in and surrounded with asbestos or sawdust. Partly also with a view to preventing freezing of the pipes and partly to exclude draught through the floors, the space under the hospital (which is raised on brick piers) has been boarded in, but

there is still, I think, ample ventilation beneath the floors. When the hospital was erected, Messrs. Humphries advised that after six months the whole outer surface should be painted to preserve the iron. It is now 18 months since the building was finished, and it would be well to soon follow the advice given.

During the year there have been five cases of smallpox treated, and, including the period at the end of 1893 when cases were under treatment, the building was in continuous use for about five months; since April it has been unused. The possession of a hospital was of immense value in enabling you to so effectually deal with your smallpox cases.

Ambulance :—

The new vehicle to serve as an ambulance, the purchase of which was decided on in December, 1893, was in use by the middle of February, 1894 : it is a very roomy second-hand landau, adapted for pair or single horse, from which the lining was removed and replaced by strong American cloth. A removable stretcher, on which a patient can lie almost full length, was fitted to occupy one side of the vehicle from back to front, leaving ample room for two others to sit beside it, or, as has been done on more than one occasion, to allow of the removal of the patient's bedding and belongings, for disinfection, at the same time as the patient is taken to hospital. So far the vehicle has answered well, being a vast improvement on the original ambulance which was neither safe as a conveyance nor weather-tight. The washable lining of the present carriage facilitates its easy and thorough disinfection. The cost of the ambulance was £23, and the relining, &c., amounted to about £6 more, making a total of about £30.

Disinfector :—

This machine has this year been removed from its original situation at the Workhouse and placed in a much more suitable position, close to the hospital. During the year 168 articles were disinfected : this number is much less than in 1893, but there was also less infectious disease in

1894, and the articles treated this year have been chiefly bulky things, such as mattresses and others which cannot readily be boiled. Most houses in the Districts contain coppers, and the practice is to disinfect, by boiling for fifteen minutes, all articles which are not injured by that process, and thus to save the difficulty of carriage to and from the disinfector. Still, all beds, &c., which should be brought to the machine do not come, because there is no special means of conveyance for them, and the only disinfection they get is sulphur fumigation. This fumigation cannot be relied on, and I should much like to see adequate arrangements made for disinfection.

Notification Act :—

The cases notified have been—

Keynsham District (Somerset).—Smallpox, 4 (one of these was not smallpox); Scarlet Fever, 12; Diphtheria, 1; Membranous Croup, 0; Enteric Fever, 8; Erysipelas, 5: Total, 30.

Warmley District (Gloucestershire).—Smallpox, 2; Scarlet Fever, 45; Diphtheria, 1; Enteric Fever, 4; Puerperal Fever, 2; Erysipelas, 26: Total, 80.

The value of this Act was especially shown by the early knowledge thus obtained of the smallpox cases, and the prompt action thereby rendered possible.

Statistics :—

In making out the statistical part of this Report I have thought it advisable, as it is possible to do so, to give the figures for the Keynsham and Warmley Rural Districts separately, and thus to secure a starting point for comparison during future years from as early a date as possible.

KEYNSHAM RURAL DISTRICT (Somersetshire)—

Acreage of District = 20,447 acres.

Population (census 1891) 7,292.

Population, estimated to middle of 1894, 7,377.

The *Deaths* from all causes registered during the year amount to 85, as compared with 119 in 1893 and 120 in 1892. These deaths, among the estimated population (7,377), are equivalent to a "Death Rate" of 11·52 per 1000 for the year, while in 1893 the rate was 16·19; in 1892, 16·39; in 1891, 17·82; and in 1890, 18·02. The continued downward tendency of the death rate in this District, noted in previous reports, is thus seen to be more than maintained, and such a rate as 11·5 must be regarded as very satisfactory.

I have endeavoured to discover whether this marked drop in the death rate is due to a diminution in fatality in any special class of disease, or whether there has been a general decline in deaths from all kinds of disease, and, to this end have examined Tables A. for the last three years, 1891 to 1893, and prepared a summary of them, setting out the yearly mortality from the chief causes of death together with the number dying during those years at certain age periods. The result is given in tabular form below, together with the corresponding figures for 1894 :—

SUMMARY OF TABLES A., 1891 to 1893.

	1891.	1892.	1893.	1894.
Bronchitis, Pneumonia, and Pleurisy	28	21	20	19
Diseases of Heart	15	12	18	11
Phthisis	9	3	8	5
Zymotic Diseases	5	6	7	2
All other causes ... ... (except those specially mentioned in Table A.)	60	63	57	46
Under 1 year of age ...	20	14	19	15
Under 5 years of age ...	25	26	26	24
Over 65 years of age ...	50	39	48	35
Between 5 and 65 years of age	46	43	39	26

This summary shows that, as regards deaths from any special class of diseases, those from lung diseases have steadily declined since 1891, and those from all other causes have steadily and rapidly lessened since 1892. As regards deaths at different age periods, it is seen that the number of those under one year and from birth up to five years of age remains practically stationary, as also does the number dying at the other extreme of life—from 65 years upwards. When, however, we consider the number dying during the middle period of life (from five up to 65 years), a steady and comparatively rapid decline is noticed; till in 1894 those dying at this age period are little more than half those who died at the same age period in 1891. To what can this be attributed? Is it that the people in this age period, the active working time of life, are migrating to the cities near? I do not think so, for if this were the case there would in all probability be a falling off in the birth rate since 1891, because the persons who might contribute to this rate would have become fewer in number. As a matter of fact, however, the birth rate in 1894, viz.:—28·73, is higher than in either 1891, 1892, or 1893. Again, the supposition that I have overestimated the population and so lowered the death rate is not tenable, for in the first place, were this the case, the birth rate would also be lowered, and in the second place the overestimation required to produce such an effect would be too great to be at all likely to occur.

Comparison of the number of deaths from various classes of disease in 1894, with the average of the deaths from the same classes in the years 1891, 1892, and 1893, brings out the same point even more forcibly, as the following Table shows:—

	Deaths from					Deaths			
	Bronchitis Pneumonia & Pleurisy	Heart Disease	Phthisis	Zymotic Diseases	All other causes	Under 1 year of age	Under 5 y'rs of age	Between 5 and 65 y'rs of age	Over 65 y'rs of age
Average of 3 years, 1891 to 1893	23	15	6·6	6	60	17·6	25·6	42·6	45·6
1894	19	11	5	2	46	15	24	26	35

It is thus seen that, compared with the average, 1894 has been an exceptionally healthy year, but that the chief difference lies in the fewer deaths from "all other causes," and specially between the ages of 5 and 65, where the number dying in 1894 is slightly less than half the average number. The conclusion seems to be that the lowered death rate is chiefly due to a saving of life during the middle and useful ages, and a less number of deaths from those kinds of disease over which your Council has only a slight and indirect control.

The *Births* registered during the year were 212, compared with a total of 208 in 1893 and 197 in 1892. The "Birth Rate" for the year is 28·73 per 1000 living. This rate was 28·30 in 1893; 26·91 in 1892; 28·11 in 1891; and 25·21 in 1890.

Zymotic diseases caused two deaths, both from Diarrhœa. These deaths are equivalent to an annual "Zymotic Rate" of 0·27 per 1000 living. In 1893, the zymotic rate was 0·95; in 1892, 0·82; in 1891, 0·82; and in 1890, 0·81. It is very satisfactory to note that no single death occurred from the more distinctly infectious diseases such as scarlet fever, measles, &c., and that in the Newton Registration Sub-district only one case of any infectious disease (diphtheria) was notified during the year.

Fifteen children died, under one year of age, giving a "Rate of Infant Mortality" of 70·75 per 1000 births. This rate was 91·34 in 1893; 71·06 in 1892; 97·56 in 1891; and 112·9 in 1890. This year's rate is much below the average rate for the country generally.

The Death and Birth Rates, for the two Registration Sub-districts during the years 1889 to 1894, are given in the following table (deaths in the Workhouse being assigned to their proper Sub-district) :—

Registration Sub-District of	Population estimated to middle of 1894.	1894		1893		1892		1891		1890		1889	
		death rate	birth rate	death rate	birth rate	death rate	birth rate	death rate	birth rate	death rate	birth rate	death rate	birth rate
Keynsham	5293	11·33	27·58	16·34	30·41	17·41	27·54	18·48	30·61	16·84	23·13	16·42	26·35
Newton ..	2084	11·99	31·67	15·80	22·98	13·85	25·32	16·20	21·92	21·25	30·87	15·59	29·08
Whole District.	7377	11·52	28·73	16·19	28·30	16·39	26·91	17·82	25·21	18·02	28·11	16·04	27·10

Appended to this Report are three Tables. Table A is a table of deaths during the whole year, classified according to diseases, ages, and localities. Table B shows the estimated population, the number of births, and the new cases of infectious sickness coming to the knowledge of the Medical Officer of Health during the whole year. Table C shows the mortality from certain classes of diseases and proportion to population, and to 1000 deaths.

WARMLEY RURAL DISTRICT (Gloucestershire).—
Acreage of District = 9,682 acres (estimated).
Population (census 1891) 13,539.
Population estimated to middle 1894, 14,277.

The Deaths, from all causes, registered during the year were 223 in number and give a "Death Rate" for the year of 15·61 per 1000 of the estimated population (14,277). Considering that a large part of your Council's District is practically urban in character this rate may be regarded as satisfactory, but I believe there is a greater proportion, among your population, of persons living at the middle periods of life than at the two extremes, and this of itself tends to diminish the number of deaths and consequently the rate.

The Births registered during the year amount to 469 as against 523 last year. The "Birth Rate" for the year is 32·85 per 1000 living. The "natural increase of population" (*i.e.* excess of births over deaths) during the year is 246.

Zymotic diseases caused 17 deaths, viz.:—3 from measles, 11 from whooping cough, and 3 from diarrhœa. These deaths are equivalent to a "Zymotic Rate" of 1·19 per 1000 living. It may be noted that your Council has little control over such a disease as whooping cough, which is not notifiable, and death from which is often due to want of care on the part of those having charge of the children affected.

Seventy-seven children died under one year of age, giving a "Rate of Infant Mortality" of 164·17 per 1000 births, a rate in excess of the average rate for the whole of England and Wales.

The following Table gives the Death and Birth rates, and estimated population in the two Registration Sub-districts; deaths occurring in the Keynsham Workhouse being allotted to that Sub-district to which they by right belong. The rates for 1891, 1892, and 1893, are given for comparison :—

Registration Sub-district of	Population estimated to middle of 1894	1894		1893		1892		1891	
		Death Rate	Birth Rate	Death Rate	Birth Rate	Death Rate	Birth Rate	Death Rate	Birth Rate
Bitton ...	5471	14·98	33·63	12·01	35·30	17·57	35·52	25·15	39·71
Oldland...	8806	16·01	32·36	16·24	38·52	17·31	32·96	21·20	37·32
Whole District	14277	15·61	32·85						

Appended to this Report are three Tables. Table A is a table of deaths during the whole year, classified according to diseases, ages, and localities. Table B shows the estimated population, the number of births, and the new cases of infectious sickness coming to the knowledge of the Medical Officer of Health during the year. Table C shows the mortality from certain classes of diseases and proportion to population and to 1000 deaths.

General :—

During the year the Mangotsfield Parochial Committee has continued its meetings and attended to the wants of that parish, subject to the approval of the Keynsham Sanitary Authority. The Brislington Parochial Committee has also continued to act.

Housing of the Working Classes Act.—

Keynsham District.—Three cottages in Brass Mill Lane, Saltford (condemned in November, 1892), were again inspected in January, 1894. Beyond putting the roofs in order, thus preventing much of the dampness, and repointing some of the gaping joints of the stone-work, I did not see that the conditions pointed out, in my report in 1892, had been dealt with, except that by raising the roof of the end

cottage to the level of that of the other two the bedrooms in that cottage were made higher. I was informed that as a result of giving the tenants a decent roof the landlord had raised their rents. The matter was reported that the Authority might decide whether further steps should be taken, and the landlord was required to carry out further improvements. In October, I condemned 16 out of a row of 19 houses known as Fairfield Terrace, Keynsham, as unfit for habitation on account of "bad construction and dilapidation of walls, defective rain shuting and roofing, general dampness, and faulty position and construction of privies and drains." These houses are an excellent example of the wretched condition into which a jerry-built house will fall in a comparatively few years. Notices to repair were served on the owners under the above Act, and the matter is still outstanding.

Warmley District.—In February I inspected four cottages at Mount's Hill, Hanham, but the conditions existing were not such as to warrant their condemnation. Notices to cleanse and whitewash, and abate certain drainage and privy nuisances were served.

Urban Powers, Bye-laws.—No fresh powers have been obtained in 1894. It may, perhaps, be useful to here set out what urban powers and bye-laws are at present in force in each district:

Keynsham District (Somerset).—Urban powers with respect to line of frontage (Sec. 155 Public Health Act, 1875, and Sec. 3 The Building in Streets Act, 1888); to regulation of new streets and buildings (Sec. 157 P.H.A., 1875); to make bye-laws under Sec. 23 Public Health Act Amendment Act, 1890, have been obtained for the Parishes of Keynsham and Brislington, and power under 158 P.H.A., 1875, to remove buildings commenced after disapproval of plans is exercisable for Brislington; Sec. 25 P.H.A., 1875, as to penalty for building a house without drains, and Secs. 112, 113, 114, relating to offensive trades apply to both parishes; also Secs. 26 and 44 as to building a house over a sewer, and power to make bye-laws as to removal of refuse, &c., and cleansing of footways. The model bye-laws for

new streets and buildings are in force in both these parishes. A bye-law is also in force making occupiers responsible for the removal of refuse.

Warmley District (Gloucestershire).—Urban powers for Mangotsfield Parish have been sanctioned under the following Sections of the Public Health Act, 1875, viz. :— Sections 155, 157, 158 (*vide* above), under Section 3 Building in Streets Act, 1888. Powers have also been obtained under Sections 160, 161, 171 P.H.A., 1875, for naming streets and numbering houses, for lighting purposes, preventing and extinguishing fires; Sections 25, 112, 113, 114 P.H.A., 1875, as to house built without drains, and as to offensive trades, are in force; also Sections 26 and 44, as to building a house over a sewer, and giving power to make bye-laws as to cleansing footways, removal of refuse, &c. The model bye-laws are in force for new streets and buildings, also one imposing the duty of removing refuse on the occupier.

Acts and Regulations applying to both Districts. —The Infectious Diseases (Notification) Act has been in force since 1st November, 1891; The Infectious Diseases (Prevention) Act came into operation on the same date; The Public Health Acts Amendment Act (so much of part 3 as is applicable to Rural Authorities) came into force on 1st January, 1891; Regulations have been in force since March 25th, 1889, under the Dairies, Cowsheds, and Milkshops Order, 1885, for inspection of cattle in dairies; regulating the lighting, ventilation, cleansing, drainage, and water supply of dairies and cowsheds; for securing cleanliness of milk stores, milk shops, and milk vessels; for preventing infection or contamination of the milk; and prescribing penalties for contravention of Regulations.

The need of control over the erection of new buildings is still painfully apparent. From the Surveyor's Report it appears that in Keynsham and Brislington Parishes (Keynsham District) 116 plans for new buildings were submitted during the year, of which 75, or just under two-thirds, were disapproved; while 36 new buildings commenced during the year resulted in 37 contraventions of bye-laws reported to

the Sanitary Authority, just over one to each building. In the Warmley District (Mangotsfield Parish) 636 plans for new buildings were submitted, of which 425, or just over two-thirds, were disapproved; while there were 214 buildings commenced and 122 contraventions of bye-laws reported, about one to every two buildings. There can be no doubt that the consistent exercise of the powers given by the building bye-laws, must result in much benefit to the districts' future inhabitants, as the prevention of narrow streets and courts, back to back houses, faulty construction leading to insecurity and dampness, and bad drainage is thereby rendered possible. But that the full benefit of the bye-laws be obtained they must be carried out in all cases, and exceptions in special cases (such as allowing a less free air space round a building than specified in the bye-laws, as has, I believe, been allowed) should never be permitted. The question of the enforcement of bye-laws is a most important one, and I venture to quote from a Report of Mr. Clair J. Grece, L.L.D. (Town Clerk for the Borough of Reigate) on bye-laws, as it sets forth clearly the position of any Authoriy in this respect. In the Report he says—"The Bye-laws for New Streets and Buildings have for their object the protection of occupiers of houses and buildings, so long as the houses endure, against the purely transitory interests of those who are now constructing them. Future occupiers will be impotent, and the Council itself, hereafter, when the houses shall have been constructed, will be impotent for the redress of evils created at the very time of construction. Not while a building is being constructed, but after it has been constructed, does the enjoyment, perfect, or impared by fundamental defects, begin. Those who will hereafter have to inhabit buildings are inevitably voiceless now. How great then must be the dereliction if the Council should suffer itself to be moved to remit, or to disregard, regulations framed in the occupiers' interest, the sole interest which the Council has in charge and which only the Council is armed with power to defend. For the building interest to urge the Council to neglect, to smother, or to remit regulations conceived in the interest of the Council's proper constituents, the occupiers, is found, when the matter is analysed, to be

hardly different to soliciting a trustee to betray his trust. The Bye-laws are not upon the same footing as an ordinary resolution of the Council, which it is within the competence of any subsequent meeting of the Council to rescind" . . . "They are not the work of the Council alone, but of the Council plus the Local Government Board, and, when they have been confirmed, every burgess, future as well as present, and future burgesses far more than present ones, acquires an interest in their due observance, and they can only be properly abrogated or set aside by open and explicit repeal, involving the concurrence of all the parties who concurred in their establishment. No doubt there is a sense in which the Council can set aside its own bye-laws, that is to say it may refuse or neglect to enforce them ; neither is there any means, except perhaps an application to the Local Government Board, whereby the aberration could be rectified ; but it is manifest that this is a purely physical and not a moral possibility. They cannot be set aside by the bye-path of inattention, or of abstention from enforcing them, consistently with the due administration of them, while it has already become abundantly clear that by entertaining applications for their remission the Council will become landed in controversies and contradictions of practice to which no limit can be assigned. A law and its administration differ only as the general differs from the particular, the one being the rule conceived apart from individual cases, the other its application to the case in hand, so that a law and its administration cannot, with any propriety, be at variance. The rule in its generality being assumed to be salutary, its application, to all cases alike subsumed under it, must be salutary too." . . . "The dealing with individual cases is a mere matter of official routine, which the official staff ought to be competent to deal with, as the constabulary force deals with cases of crime, and neither the Council nor any Committee should be further called on to interfere than may be necessary for ensuring that the staff perform its duties properly." That is, I apprehend, to see that the staff permits no contravention of the Bye-laws.

The Keynsham Sanitary Authority had experience of the difficulty and trouble entailed by allowing something

short of the requirements of the Bye-laws, and I am convinced of, and venture to urge upon your two District Councils, the necessity of carrying out your Bye-laws without exception.

Dairies, Cowsheds, and Milkshops Order.—During the year 30 dairies, &c., have been inspected in the Keynsham, and 80 in the Warmley District, and orders for amendment of faulty conditions given where required.

During the year the usual Quarterly Reports have been presented, also reports on the drainage of Priory Road and The Avenue, Keynsham; on certain dwellings under the Housing of the Working Classes Act; on various outbreaks of infectious disease; on hospital and ambulance matters; on numerous waters and the water supply of North Common, Bitton; and my advice has been sought as to the drainage of Priory Road and The Avenue, Keynsham, the Keynsham Sewerage, Hospital Administration, and numerous minor matters.

There can be no doubt that during the six and a half years over which my knowledge of the Keynsham Sanitary District extends, that is, up to December 28th, 1894, when it was sub-divided into the Keynsham and Warmley Rural Districts, there has been a vast improvement in many of the sanitary conditions. This has been due to the great interest which the Keynsham Sanitary Authority, now passed away, took in their work and the exercise of the powers conferred on them by the Public Health Act, 1875, and the more recent Sanitary Acts. Some of the more recent Acts are adoptive, and these, so far as they apply to Rural Districts, bave been adopted. Much has been done to improve the water supply of the district, sewerage has received considerable attention, with the result that two large schemes have been adopted; a hospital, ambulance, and disinfector have been provided, and the general well-being of the district from a Public Health point of view has been sought.

I would point out to the Keynsham District Council that the chief fault in the condition of their district is the lack of proper sewerage in Keynsham Town, and would urge the early consideration of this important matter with the hope that a proper scheme will be quickly determined

upon, and carried out. Bye-laws for regulation of slaughter houses would be useful as many of them are insanitary. The Bye-law adopted by the Keynsham Sanitary Authority in 1893 enacting that no inhabited room should be of less height than 8 ft. 6 ins. has not been sanctioned: sanction should be obtained.

To the Warmley District Council I would suggest the necessity of adopting the model Bye-laws for New Streets and Buildings to apply to the Parishes of Downend, Oldand, Hanham, and Bitton. Buildings are rapidly being erected in these parts and some means of checking the propensity of builders to scamp their work is much needed. Bye-laws for regulation of slaughter houses, many of which are insanitary, are required. A Bye-law enacting that no inhabited room should be less than 8 ft. 6 ins. high would be very useful. I believe also that before long it will be necessary to consider the question of sewers for some portions of the district, as for instance, Warmley and Cadbury Heath.

Before concluding I wish respectfully to express my sense of the unvarying courtesy extended to me by the late Keynsham Sanitary Authority; of the consideration they have always given to any suggestions or advice tendered by me, and of the manner in which they have, except in one or two points, adopted and enforced measures for the safety of the Public Health which I have from time to time put forward. It is a great pleasure to me to know that I shall still have to be accountable to many of the late Authority for the health of the new Districts.

I feel that I must also heartily thank my fellow Officers for much help willingly rendered, and I hope that that good understanding and *esprit de corps* we have hitherto enjoyed may continue unchanged.

I remain, Gentlemen,

Your obedient servant,

JOHN C. HEAVEN, L.R.C.P., M.R.C.S., L.S.A.

Diplom. Pub. Health, Roy. Colls. Phys. Surg., Eng.
Medical Officer of Health to the Keynsham Rural District Council
and
The Warmley Rural District Council.

Surveyor's Report for 1894.

STAPLE HILL,

January, 1895.

	Somerset		Glo'ster	Total
	Brislington Parish	Keynsham Parish	Mangotsfield Parish	
I.—NEW BUILDINGS.				
No. of Plans submitted	22	94	636	752
No. of Plans approved	13	28	211	252
No. of Plans disapproved ...	9	66	425	500
No. of Buildings commenced ...	21	15	214	250
No. of Buildings completed ...	24	14	192	230
No. of Buildings certified as fit for occupation	23	12	175	210
II.—DRAINS IN CONNECTION WITH NEW BUILDINGS.				
No. of Drains inspected	24	13	197	234
No. of Drains connected to Sewers	23	11	0	34
No. of Drains connected to Cess-pools	1	2	197	200
No. of Water Closets constructed ...	26	15	204	245
No. of Earth Closets constructed ...	0	1	1	2
No. of Privies constructed ...	0	0	0	0
III.—DRAINS IN CONNECTION WITH OLD BUILDINGS RECONSTRUCTED.				
No. connected to Sewer	14	5	0	19

	Somerset		Glo'ster	
	Brislington Parish	Keynsham Parish	Mangotsfield Parish	Total
IV.—New Streets.				
No. of Plans submitted	2	1	4	7
No. of Plans approved	2	1	2	5
No. of Plans disapproved ...	0	0	2	2
No. of New Streets commenced ...	2	0	2	4
No. of New Streets finished ...	0	0	0	0
V.—Sewers.				
Total length in yards of New Sewers laid during the year	520	80	about 24500*	25100
VI.—Contraventions of Bye-Laws and Regulations.				
No. of Contraventions of Bye-laws reported to San. Auth.	24	13	122	159
No. of Regulations Contravened and Reported to San. Auth. ...	4	5	0	9
No. of Contraventions dealt with by Justices	0	0	2	2
No. of Contraventions standing over at the end of year	7	2	5	14

HENRY M. BENNETT,

Surveyor.

* Under the supervision of Mr. C. N. Lailey, C.E., of Westminster.

Staple Hill, Bristol,

January 31st, 1895.

The Drainage of Priory Road and The Avenue, Keynsham.—I enclose herewith a corrected report for the year 1894. Drawings were prepared in accordance with the definite instructions of the Sanitary Authority, shewing a 9″ sewer to be constructed on the south side of and parallel to the permanent way of the G.W.R. from a point 250′ below the road which runs beneath the railway on the west of the station, to a point as near as possible to the cesspool on The Avenue side. The total length of 9″ pipe sewer is 1000′.

A man-hole is shewn at the head of the 9″ pipe into which three 6″ sewers will discharge: one from The Avenue cesspit, one from the cesspit on the railway, and the third from the Priory cesspit; the latter will be taken beneath the rails. The total length of 6″ pipe sewer is about 420′.

The permission of the G.W.R. to carry out the work was not obtained until December, when the Sanitary Authority decided to refer the matter to the new District Council.

The reason it was necessary to obtain the consent of the G.W.R. was because the construction of these works would be a contravention of the Rivers Pollution Acts, as the outfall would be in an open ditch which flows through several fields, and thence into the Avon.

At the present time the cesspits are as they have been for a number of years. The sewage of Priory Road is allowed to soak away as best it can through the already saturated soil which surrounds the cesspits, and that of The Avenue is pumped almost daily on to the G.W.R. bank close by.

The railway cesspit is still existing and uncovered, and its overflow is discharged into the ditch before referred to.

Mangotsfield Sewerage.—The total length of sewers is estimated at 17 miles, out of which about 14 miles have been laid.

The outfall works and flushing arrangements have not yet been commenced.

It will be necessary to apply to the Local Government Board for sanction to an additional loan.

Open street man-hole ventilators are being used in some places, which is open to objection, and if the new District Council can be persuaded to abolish them, and use only shafts carried up a sufficient height to avoid the possibility of a nuisance, I think they will save themselves trouble hereafter.

Building Bye-laws for Brislington, Keynsham, and Mangotsfield.—Bye-laws have been framed, but not adopted, for regulating the height of rooms, the reconstruction of old buildings, and other important matters.

Yours faithfully,

HENRY M. BENNETT,

Surveyor.

INSPECTOR OF NUISANCE'S REPORT

For the Year 1894.

		Keynsham, Somerset,	Warmley, Glos.
	No. of Complaints received during the year ..	100	207
	No. of Houses, Premises, &c', inspected ..	203	315
	No. of re-visits to see that work has been carried out, or for other reasons	203	315
Results of Inspection.	No. of Orders issued for Sanitary Amendment of Houses or Premises	55	138
	No. of Houses or Premises cleansed, repaired, or whitewashed	69	94
	No. of Houses disinfected, or to which disinfectants were supplied	71	142
Sewers.	No. of New Sewers laid down by the Authority	—	1
	No. of Sewers cleansed or repaired	1	2
House Drains.	No. repaired or cleansed	77	94
	No. relaid (piped)	21	47
	No. trapped or ventilated	69	170
	No. of New Pipe Drains laid	22	55
	No. of other New Drains laid out	nil	nil
Privies, Cesspools, and W.C's.	No. of Privies cleansed or reconstructed ..	109	198
	No. of Cesspools cleansed or reconstructed ..	103	154
	No. of Cesspools closed	19	47
	No. of New Privies or Cesspools	24	39
	No. of New W.C's.	21	51
	No. of Dry Privies constructed	20	59
Water Supply.	No. of Wells closed	7	15
	No. of Samples of Water taken for Analysis ..	9	20
	No. of *Old* Houses supplied with Company's Water	70	13
	No. of New Wells	nil	nil
	No. of New Cisterns	nil	nil
	No. of Wells or Cisterns cleansed or repaired ..	17	19
New Houses.	No. of New Houses certified as fit for habitation	12	23
	No. of such Houses supplied with Company's Water	9	19
	No. of such Houses supplied by Wells or Cisterns	3	4
	No. of Dairies, &c., inspected	30	80
	No. of Bakehouses inspected	12	24
	No. of Slaughter-houses inspected	10	27
	No. of Factories inspected	15	29
	Overcrowding (cases of) reported	17	53
	,, ,, abated	17	53
	No. of Legal Proceedings	1	—

(Signed) JOHN JAMES OLLIS, Assoc. San. Institute,

Inspector of Nuisances.

(A)

TABLE of DEATHS *during the Year* 1894, *in the Rural Sanitary District of* KEYNSHAM, *classified according to* Diseases, Ages, *and* Localities.

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities. (*Columns for Population and Births are in Table B*). (a)	Mortality from all causes, at subjoined Ages.							(i)	Mortality from subjoined causes, distinguishing Deaths of Children under Five Years of Age.																				
									Smallpox	Scarlatina	Diphtheria	Membranous Croup	Fevers.					Cholera	Erysipelas	Measles	Whooping Cough	Diarrhœa and Dysentery	Rheumatic Fever	Ague	Phthisis	Bronchitis, Pneumonia and Pleurisy	Heart Disease	Injuries	All other Diseases	Totals.
													Typhus	Enteric or Typhoid	Continued	Relapsing.	Puerperal												
	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25	25 and under 65	65 and upwards.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	31	22
	(b)	(c)	(d)	(e)	(f)	(g)	(h)																						
KEYNSHAM	60	11	6	3	5	14	21	under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	6	...	...	10	17
								5 upwds.	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	5	5	7	1	25	43
NEWTON	25	4	3	1	1	2	14	under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	3	7
								5 upwds.	...	...	...	...	...	...	..	...	...	...	...	...	...	1	...	...	...	5	4	...	8	18
Total	85	15	9	4	6	16	35	under 5	...	...	..	...	...	...	...	...	...	...	...	...	...	1	...	...	...	9	...	1	13	24
								5 upwds.	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	5	10	11	1	33	61

The subjoined numbers have also to be taken into account in judging of the above records of mortality.

Deaths occurring outside the district among persons belonging thereto.	No means of ascertaining.							under 5																							
								5 upwds.																							
Deaths occurring within the district among persons not belonging thereto.								under 5																							
								5 upwds.																							

Acreage—20,447 acres.

(B) *TABLE of* POPULATION, BIRTHS, *and of* NEW CASES OF INFECTIOUS SICKNESS, *coming to the knowledge of the Medical Officer of Health, during the Year* 1894, *in the Rural Sanitary District of* KEYNSHAM; *classified according to* DISEASES, AGES, *and* LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.	Population at all Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.													Number of sick Cases Removed from their Homes in the several Localities for Treatment in Isolation Hospital.												
									Fevers.												Fevers.								
	Census 1891.	Estimated to Middle of 1894.			Smallpox	Scarlatina	Diphtheria	Membranous Croup	Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal	Cholera	Erysipelas	12	13	Smallpox	Scarlatina	Diphtheria	Membranous Croup	Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal	Cholera	Erysipelas	12	13
(a)	(b)	(c)	(d)	(e)	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	3	5	6	7	8	9	10	11	12	13
KEYNSHAM (H) ...	5194	5293	146	under 5	1	4	...	...	...	...	...	...	...	...	...	...	...	1												
				5 upwds.	3	8	...	...	...	8	...	...	...	...	5	...	...	2												
NEWTON	2098	2084	66	under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...												
				5 upwds.	...	...	1	...	...	...	...	...	...	...	...	...	...	...												
Totals	7292	7377	212	under 5	1	4	...	...	...	...	...	...	...	...	...	...	...	1												
				5 upwds.	3	8	1	...	...	8	...	...	...	...	5	...	...	2												

State here whether "Notification of Infectious Disease" is compulsory in the District—Yes. Since when?—1st November, 1891. State here the name of the Isolation Hospital used by the sick of the District—Keynsham Isolation Hospital. Mark (H) the Locality in which such Hospital is situated.

KEYNSHAM DISTRICT.

ABLE C. Showing Mortality from certain Classes of Diseases, and Proportion to Population and to 1000 Deaths.

	Total Deaths	Proportion to 1000 of Population	Proportion to 1000 Deaths.
-Seven principal Zymotic Diseases	2	0·27	23·53
-Pulmonary Diseases (other than Phthisis)	19	2·57	223·5
-Phthisis and other Tubercular Diseases	6	0·81	70·58
-Wasting Diseases of Children under Five years of age ...	4	0·54	47·05
-Convulsive Diseases of Children under Five years of age ...	7	0·94	82 35
-Cancer	2	0·27	23·53
-Accident	1	0·13	11·76
-Suicide	—	—	—
-Influenza	—	—	—

NOTES.

-Includes Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa.

-Includes Phthisis, Tubercular Meningitis and Peritonitis, General Tuberculosis, Scrofula, Rickets, and Tabes.

-Includes Marasmus, Debility, Want of Breast Milk, and Premature Birth.

Includes Hydrocephalus, Infantile Meningitis, Convulsions, and Teething.

Showing Number of Deaths from the same Classes of Diseases occurring in each Registration Sub-District.

Registration Sub-District of	Number of Column.								
	1	2	3	4	5	6	7	8	9
KEYNSHAM	1	11	5	3	6	2	0	0	0
NEWTON ...	1	8	1	1	1	0	1	0	0
TOTALS ...	2	19	6	4	7	2	1	0	0

Note.—The Numbers of the Columns correspond to the Classes of Diseases similarly numbered in the first half of the Table.

(A)

TABLE of **DEATHS** *during the Year* 1894, *in the Rural Sanitary District of* **WARMLEY**, *classified according to* **Diseases, Ages,** *and* **Localities.**

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities. (*Columns for Population and Births are in Table B*). (a)	Mortality from all causes, at subjoined Ages.								Mortality from subjoined causes, distinguishing Deaths of Children under Five Years of Age.																				
									Smallpox	Scarlatina	Diphtheria	Membranous Croup	Fevers.				Cholera	Erysipelas	Measles	Whooping Cough	Diarrhœa and Dysentery	Rheumatic Fever	Ague	Phthisis	Bronchitis, Pneumonia and Pleurisy	Heart Disease	Injuries	All other Diseases	Totals.
	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25	25 and under 65	65 and upwards.						Typhus	Enteric or Typhoid	Continued	Relapsing.	Puerperal												
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	31	22
BITTON	82	21	9	4	6	21	21	under 5	...	...	...	...	...	...	...	...	...	...	...	2	2	1	...	...	...	11	1	...	13	30
								5 upwds.	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	...	7	5	8	1	28	52
OLDLAND	141	56	19	1	5	36	24	under 5	...	...	...	...	...	...	...	...	...	...	1	...	9	2	...	...	...	25	...	2	36	75
								5 upwds.	...	...	...	...	...	...	..	...	1	...	1	...	...	...	...	...	9	14	12	1	28	66
Total	223	77	28	5	11	57	45	under 5	...	...	..	...	...	...	...	...	...	...	1	2	11	3	...	...	...	36	1	2	49	105
								5 upwds.	...	...	...	...	...	...	...	...	2	...	1	1	...	...	1	...	16	19	20	2	56	118
The subjoined numbers have also to be taken into account in judging of the above records of mortality.																													
Deaths occurring outside the district among persons belonging thereto. } No means of ascertaining.								under 5																					
								5 upwds.																					
Deaths occurring within the district among persons not belonging thereto.								under 5																					
								5 upwds.																					

Estimated Acreage—9,682 acres.

(B) *TABLE of* **POPULATION, BIRTHS,** *and of* **NEW CASES OF INFECTIOUS SICKNESS,** *coming to the knowledge of the Medical Officer of Health, during the Year* **1894,** *in the Rural Sanitary District of* **WARMLEY**; *classified according to* DISEASES, AGES, *and* LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.	Population at all Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.													Number of sick Cases Removed from their Homes in the several Localities for Treatment in Isolation Hospital.												
									Fevers.												Fevers.									
	Census 1891.	Estimated to Middle of 1894.			Smallpox	Scarlatina	Diphtheria	Membranous Croup	Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal	Cholera	Erysipelas			Smallpox	Scarlatina	Diphtheria	Membranous Croup	Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal	Cholera	Erysipelas		
(a)	(b)	(c)	(d)	(e)	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	3	5	6	7	8	9	10	11	12	13
BITTON	5288	5471	184	under 5	...	1	...	...	...	...	...	...	...	...	1	...	...	...												
				5 upwds.	...	10	...	...	...	...	...	...	1	...	2	...	...	...												
OLDLAND	8251	8806	285	under 5	...	14	1	...	...	...	...	...	...	...	...	...	...	...												
				5 upwds.	2	20	...	...	...	4	...	...	1	...	23	...	...	2												
Totals	13539	14277	469	under 5	...	15	1	...	...	...	...	...	...	...	1	...	...	...												
				5 upwds.	2	30	...	...	...	4	...	...	2	...	25	...	...	2								Total	Notifications		= 80.		

State here whether "Notification of Infectious Disease" is compulsory in the District—Yes. Since when?—1st November, 1891. State here the name of the Isolation Hospital used by the sick of the District—Has used the Keynsham Isolation Hospital at Keynsham (Somerset). Mark (H) the Locality in which such Hospital is situated.

BLE C. Showing Mortality from certain Classes of Diseases, and Proportion to Population and to 1000 Deaths.

	Total Deaths	Proportion to 1000 of Population	Proportion to 1000 Deaths.
Seven principal Zymotic Diseases	17	1·19	76·23
Pulmonary Diseases (other than Phthisis)	55	3·85	246·63
Phthisis and other Tubercular Diseases	19	1·33	85·2
Wasting Diseases of Children under Five years of age ...	24	1·68	107·6
Convulsive Diseases of Children under Five years of age ...	19	1·33	85·2
Cancer	8	0·59	35·87
Accident	3	0·21	13·45
Suicide	1	0·07	4·48
Influenza	4	0·28	17·93

NOTES.

Includes Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa.

Includes Phthisis, Tubercular Meningitis and Peritonitis, General Tuberculosis, Scrofula, Rickets, and Tabes.

Includes Marasmus, Debility, Want of Breast Milk, and Premature Birth.

Includes Hydrocephalus, Infantile Meningitis, Convulsions, and Teething.

Showing Number of Deaths from the same Classes of Diseases occurring in each Registration Sub-District.

Registration Sub-District of	Number of Column.								
	1	2	3	4	5	6	7	8	9
BITTON ...	6	16	7	9	4	4	1	0	1
OLDLAND	11	39	12	15	15	4	2	1	3
TOTALS ...	17	55	19	24	19	8	3	1	4

Note.—The Numbers of the Columns correspond to the Classes of Diseases similarly numbered in the first half of the Table.